DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

Frequently Asked Questions

CARBAMATE INSECTICIDES

What are CARBAMATE INSECTICIDES?

Carbamate insecticides, used to kill or control insects, are made from carbamic acid. There are many forms of carbamates, each different in the way they work and in their poisonous effects. Carbamates break down in the environment within weeks or months.

Where are carbamate insecticides found and how are they used?

Carbamates are used as sprays or baits to kill insects by affecting their brains and nervous systems. They are used on crops and in the home to kill cockroaches, ants, fleas, crickets, aphids, scale, whitefly, lace bugs and mealy bugs. Some carbamates control mosquitoes. Some carbamates are found in ground water at levels high enough to cause concern.

How are people exposed to carbamate insecticides?

The most important human exposure route is through the skin. However, exposure can also occur through breathing carbamates, or by eating food or drinking ground water in contact with carbamates. People whose work involves applying insecticides and farm workers are the most likely to be affected. People who use carbamates to kill insects in the home or yard may be exposed to low levels, likely without health effects.

How do carbamate insecticides work and how can they affect my health?

Carbamate exposure can cause headaches, dizziness, weakness and nausea. Carbamate can also cause shaking, stomach cramps, diarrhea and sweating. Skin exposure to carbamates causes a minor rash. Long-term exposure can result in loss of appetite, weakness, weight loss and a general feeling of sickness.

There is not enough information about carbamates to know if they cause cancer in humans. Nerve, heart and muscle damage may occur because carbamates increase nerve impulses by increasing the flow of acetylcholine across nerve cells.

How is carbamate insecticide poisoning treated?

Physicians treat carbamate poisoning with a substance called atropine.

What should I do if exposed to carbamate insecticides?

If you breathe carbamates, get fresh air right away. Get medical help. Artificial respiration may be needed.

If you touch carbamates, remove contaminated clothes. Rinse and then wash skin well with water and soap. Get medical help.

If you get carbamates in your eyes, remove contact lenses if you can do it easily. Rinse your eyes with plenty of water for several minutes. Get medical help.

If you swallow carbamates, get medical help.

What factors limit use or exposure to carbamate insecticides?

Limit exposure by avoiding household insecticides containing carbamates. Follow product directions if they are used. If you are near an area where carbamates are found in drinking water, use bottled water or an alternate water supply. If you work where carbamates are made or used, follow all health and safety rules.

Is there a medical test to show whether I've been exposed to carbamate insecticides?

A blood test can show possible exposure to carbamate insecticides. The test should be done with 48 hours of exposure.

Technical information for carbamate insecticides

CAS Number: There are at least 40 carbamate insecticide numbers that are not included here.

Chemical Formula: There are at least 40 carbamate insecticide chemical formulas that are not included here.

Carcinogenicity (EPA): A review of the EPA/IRIS database found that the carbamate insecticides listed were either not assessed under the program or not classifiable as to their carcinogenicity.

MCL (Drinking Water): The MCL for Carbofuran is 0.04 mg/L.

Aldicarb is not listed on the EPA List of Drinking Water Contaminants & MCLs; however, an EPA document references a proposed MCL for Aldicarb of 3ppb.

OSHA Standards: There is an OSHA PEL standard Carbaryl of 5 mg/m^3.

NIOSH Standards: There is a NIOSH REL time weighted average for Propoxur of 0.5 mg/m^3. The NIOSH REL for Carbofuran is 0.1 mg/m^3. The NIOSH REL standard for Carbaryl is 5 mg/m^3. The NIOSH limit for Methomyl is 2.5 mg/m^3 averaged over a 10-hour work shift. Since there are over 40 carbamate insecticides, this list should not be considered inclusive of the occupational exposure limits.

References and Sources

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